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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,188	01/15/2002	Brian C. Barnes	2000.056900/TT4089	5070

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EXAMINER	
SON, LINH L D	
ART UNIT	**PAPER NUMBER**
2135	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/047,188	BARNES ET AL.	
	Examiner	Art Unit	
	Linh LD Son	2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

AU2135

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responding to the Amendment received on 11/08/06.

2. Claims 1-20 are pending.

Response to Arguments

3. Applicant's arguments, see Amendment, filed 11/08/06, with respect to the rejection(s) of claim(s) 1-20 under USC 102(b) rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Clifton. See below.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the claims language directs to non-tangible result. Applicant claims executing a software object, but does not provide a mean to executing nor producing a tangible result.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clifton, US Patent No. 5469556.

7. As per claims 1 and 12:

Clifton discloses "A method, comprising:

executing a software object (e.g. subroutines, standalone program) " in (Col 8: 19-29, and Col 2: 35-45);

establishing a security level for said software object{based on the user authorization access}" in (Col 5: 12-25);

"performing a multi-table I/O (user/job, domain, and page tables) access using at least one of said security levels (Clearance levels confidential, secret, secret, and top secret)" in (Col 9: 5-20, and Col 9:20-45) {The security system goes through the tables above to get access to the permissible resource or memory address (Col 8:63-67)}; and

"executing said function of said object, wherein executing said function comprising accessing at least a portion of said input/output space" in (Col 5 lines 40-45,and Col 4 lines 20-45).

However, Clifton does not explicitly teach of executing a software object.

Nevertheless, Clifton teaches executing a secure instruction (Col 2:39-43).

Therefore, it would have been obvious at the time of the invention was made for one having ordinary skill in the art to realize that the execution of the secure instruction is an actual process of executing a software object or software subroutine to access a secure memory area at a certain security level (Col 2: 35-47).

8. As per claim 2:

Clifton discloses "The method described in claim 1, wherein executing a software object further comprises using a processor to process software code of said software object" in (Col 3: 55-65).

9. As per claim 3:

Clifton discloses "The method described in claim 1, wherein establishing a security level for said software object further comprises assigning a security level relating to a Input/Output (I/O) access of at least a portion of a memory" in (Col 3:53-65).

10. As per claim 4:

Clifton discloses "The method described in claim 1, wherein performing a multi-table Input/Output (I/O) access using at least one of said security level further comprises:

establishing a secondary I/O table (Virtual Address Table for Process A)" in (Col 4 lines 25-35);

"receiving a Input/Output (I/O) space access request based upon executing of said software object(Domain Table)" in (Col 9: 55-65, Col 8:50-60);

"performing a multi-level table access based upon said Input/Output (I/O) space access request using said secondary table and at least one virtual memory table" in (Col 9:5-45); and

"accessing a portion of a memory based upon said multi-level table access" in (Col 9:10-20).

11. As per claim 5:

Clifton discloses "The method described in claim 4, wherein establishing a secondary table further comprises:

dividing a Input/Output (I/O) space into a plurality of segments{as defined in the specification Para 0048, Segment is page of memory}" in (Col 9:40-45);

"determining at least one of said segment to omit from said secondary table and at least one un-omitted segment" {Clifton uses the offset value to omit and un-omit the segment} in (Col 9:60 to Col 10:9);

"assigning a default security level to said omitted segment" in (Col 9: 56-61);

assigning a security level to said un-omitted segment" in (Col 9:56 to Col 10:9);

and correlate at least one assigned segment with an Input/Output (I/O) space location" in (Col 10: 1-5).

12. As per claim 6:

Clifton discloses "The method described in claim 4, wherein performing a multi-level table access based upon said Input/Output (I/O) space access request further comprises:

determining at least one security level that corresponds to a segment in said secondary Input/Output (I/O) table" in (Col 9:56 to Col 10:9);

"verifying a match between an execution security level to a security level associated with a segment being accessed in response to an execution of said object" in (Col 10: 1-10);

"determining a Input/Output (I/O) space address based upon said secondary table in response to a match between said execution security level and said security level associated with said segment being accessed; and

locating a Input/Output (I/O) device corresponding to said virtual memory address" in (Col 10: 1-5).

13. As per claims 7:

Clifton discloses "The method described in claims 6, wherein determining at least one security level that corresponds to a segment in said secondary Input/Output (I/O) table comprises:

determining a physical Input/Output (I/O) device address from said secondary Input/Output (I/O) table" in (Col 10: 1-10);

"determining a segment being executed based upon said physical Input/Output (I/O) device address; and

defining a current security level based upon said determining of said segment being executed" in (Col 9:56 to Col 10:9).

14. As per claims 8 and 17:

Clifton discloses "A computer readable program storage device encoded with instructions that, when executed by a computer, performs a method, comprising:

Executing a software object (e.g. subroutines, standalone program) " in (Col 8: 19-29, and Col 2: 35-45);

Establishing a security level for said software object {based on the user authorization access level}" in (Col 5: 12-25);

Establishing a secondary input/ouput (I/O) table(Domain Table)" in (Col 9: 55-65, Col 8:50-60);

Receiving an I/O space access request based upon executing of said software object" in (Col 9:5-45);

"Determinng at least one security level that corresponds to a segment in said secondary I/O table" in (Col 9: 55-65, Col 8:50-60);

"Verifying a match between an execution security level to a security level associated with a segment being accessed in reponse to an execution of said software object" in (Col 4 lines 5-20, and Col 3 lines 5-15);

"Determining an I/O space addresses based upon said secondary I/O table in response to a match between said execution security level and said security level associated with said segment being accessed" in (Col 9:56 to Col 10:9);

"Locating a physical I/O device location corresponding to said I/O space address; and

accessing a portion of an I/O device based upon locating said physical memory location" in (Col 10:1-9).

However, Clifton does not explicitly teach of executing a software object.

Nevertheless, Clifton teaches executing a secure instruction (Col 2:39-43).

Therefore, it would have been obvious at the time of the invention was made for one having ordinary skill in the art to realize that the execution of the secure instruction is an actual process of executing a software object or software subroutine to access a secure memory area at a certain security level (Col 2: 35-47).

15. As per claims 9 and 18:

Clifton discloses "The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claims 8 and 17, wherein executing a software object further comprises using a processor to process software code of said software object" in (Col 3 lines 35-43).

16. As per claims 10 and 19:

Clifton discloses "The computer readable program storage device encoded with instructions that, when executed by a compute, performs the method described in claims 8 and 17, wherein establishing a security level for said software object further comprises assigning a security level relating to an I/O space access of at least a portion of an I/O device" in (Col 3: 55-65).

17. As per claims 11 and 20:

Clifton discloses "The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claims 8 and 17, wherein determining at least one security level that corresponds to a segment in said secondary I/O table comprises:

Determining a physical I/O device address from said I/O space table" in (Col 10: 1-10);

"Determining a segment being executed based upon said physical I/O device address; and

Defining a current security level based upon said determining of said segment being executed" in (Col 9:56 to Col 10:9).

18. As per claims 13-14:

Clifton discloses "An apparatus, comprising:

a processor coupled to a bus" in (Col 5 lines 60-65);

"means for coupling at least one software object (Trusted processes to access a trust resource or memory) to said processor;

a Input/Output (I/O) device" in (Col 8: 63-67); and

"a Input/Output (I/O) access interface coupled to said bus and said memory unit" in (Col 5 lines 60-65);

"said memory access interface to provide said processor a multi-level table Input/Output (I/O) access interface to provide said processor a multi-level table (Col 4 lines 30-40) Input/Output (I/O) space access of at least a portion of said memory unit based upon at least one security level, in response to said processor executing said software object (e.g. subroutines, standalone program)" in (Col 9: 5-20, and Col 9:20-45).

However, Clifton does not explicitly teach of executing a software object.

Nevertheless, Clifton teaches executing a secure instruction (Col 2:39-43).

Therefore, it would have been obvious at the time of the invention was made for one having ordinary skill in the art to realize that the execution of the secure instruction is an actual process of executing a software object or software subroutine to access a secure memory area at a certain security level (Col 2: 35-47).

19. As per claim 15:

Clifton discloses "The apparatus of claim 13, wherein said Input/Output (I/O) space access interface comprises a Input/Output (I/O) space access table coupled with a secondary Input/Output (I/O) table, said memory access interface to provide a virtual memory addressing scheme to access at least one portion of said Input/Output (I/O) device based upon a security level" in (Col 9:56 to Col 10:9).

20. As per claim 16:

Clifton discloses "The apparatus of claim 13, wherein said Input/Output (I/O) device comprises at least one of a magnetic tape memory, a flash memory, a random access memory, and a memory residing on a semiconductor chip" in (Col 3:7-14).

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh LD Son whose telephone number is 571-272-3856. The examiner can normally be reached on 9-6 (M-F).

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linh LD Son
Examiner
Art Unit 2135

Thanhnga B. Truong
AU2135